limiliH of pure COa formation, to sink under the value which is obtained in puro air-gas production. The combustible value of the gaw per unit of volume will, owing to the presence of COo, bo considerably diminished, and hereby it results that it in (thortire to drirc the addition, of steam beyond the limit of the (Vitiation, of tin* -minimum reaction temperature necessary for the formation of pure CO.

Tliis conclusion has been on all sides confirmed by experience in practice, ami thus, amongnt others, Lehrmann (" Stahl und Eison,1' I'.MUi, p. -i}Jf>) maintains "that the introduction of H20 vapour into tlw producer, can only be advantageous if one, nevertheless, is in a position to produce C0'2 free gas." Further, it has been demonstrated by practical experiments, as also follows from researches of Harries (p. 86), that by the introduction of largo amounts of steam into the producer largo quantities pass through the producer undecomposed. Hut the ruby the. quantity of boat which was expended on its production is lost, IIHI steam is more highly heated in the pro-dueer, and carries oil* thin heat, and imparts it finally to the properties of the producer gas, which is prejudicial to working of the furnace, and will bo discussed later.

(//) HTHAM-AOI (!AH PRODUCTION WITH PREHEATED Am SUPPLY.

The second way of producing a steam-air gas with high hydrogen content, consists in Iho employment of superheated Hteam, or preheated air supply, and aims, owing to the sensible hunt of the gasifying medium introduced, at compensating for the heat lossos, which must result from increased decomposition of water. The steam and air should be just so much preheated, that in spite of the increased addition of abeam, tbti reaction temperature in maintained at 1,150°, and thus also the coiulitiouH for pure CO formation are maintained.

One easily perceives that by means of superheating the Htoam which (an in apparent from Table E, given on p. 60) may only bo achieved in practice in small measure, only a quite small calorific figure can be obtained, which may be summed up by the formula (</), p. -1H: